CEMENT CONCRETE FLOORING TILES

Lab ID	:	**CP-2017-05-31-01** **Date: 03-06-17**
Customer	:	Assistant Executive Engineer, Project division, Yelahanka zone, BBMP,
Address	:	Project division, Yelahanka zone, BBMP, Bangalore.
Project Name	:	Providing open gym equipment in Yelahanka New town park at 5th phase
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer Reference	:	EE(Project) Ynk.Zone/WO/04/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	31-05-17
Sample ID No	:	2017-05-31-01/02
Sample Type/ Size	:	Pre-Polished Designer Cement Concrete Tiles
Reference to BIS codes	:	IS 1237:2012
Date of test	:	31-05-17

1.Wet Transverse Strength

Sl.No.	Dimension (mm)			Wet Transverse Strength	Average	Requirement as per IS:1237-2012
	L	B	T	(N/mm^2)	(N/mm^2)	
1	400	402	25.16	7.83	7.92	The average wet transverse strength shall not be less than $3N/mm^2$.
2	401	401	25.4	8.26		
3	400	402	25.15	7.71		
4	401	400	25.16	7.98		
5	402	400	25.21	8.25		
6	400	401	25.17	7.49		

2. Water Absorption

Sl.No.	Dimension (mm)			Water Absorption	Average	Requirement as per IS:1237-2012
	L	B	T	(%)	(%)	
1	402	401	25.18	3.53	3.91	The average percentage of water absorption shall not exceed 10.
2	400	402	25.16	3.92		
3	401	400	25.36	4.17		
4	401	401	25.18	4.16		
5	402	402	25.13	3.90		
6	400	400	25.19	3.76		

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Harshitha

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE KERB STONE

Lab ID	:	**CP-2017-05-31-01** **Date: 03-06-17**
Customer	:	Assistant Executive Engineer, Project division, Yelahanka zone, BBMP, Bangalore.
Address	:	Project division, Yelahanka zone, BBMP, Bangalore.
Project Name	:	Providing open gym equipment in Yelahanka New town park at 5th phase in Ward no.03
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project) Ynk.Zone/WO/04/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	31-05-17
Sample ID No	:	2017-05-31-01/01
Sample Type /Size	:	CC Kerb Stone/ 450*165*400mm
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	31/05/2017

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	Kg	(Sq.mm)	(KN)	(N/mm2)	(N/mm2)	(N/mm2)
1	A	100.21	165.49	2.846	7886	162.9	20.7	19.2	24.0
2	B	100.33	165.58	8.739	7904	165.1	20.9	20.9	26.1
3	C	100.51	165.53	8.855	7933	164.4	20.7	20.7	25.9

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Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-05-29-06** **Date: 02-06-2017**
Customer	:	Assistant Executive Engineer, Project division, Yelahanka zone, BBMP, Bangalore.
Address	:	Project division, Yelahanka zone, BBMP, Bangalore.
Project Name	:	Providing open gym equipment in Yelahanka New town park at 5th phase in Ward no.03
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project) Ynk.Zone/WO/04/2017-18
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	29-05-17
Sample ID No	:	2017-05-29-06/01
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	29-05-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	754	754	5.0	95.0	90-100
3	20 mm	6764	7518	50.1	49.9	30-70
4	10 mm	4527	12045	80.3	19.7	10-35
5	4.75 mm	2716	14761	98.4	1.6	0-5
6	Pan	239	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-05-29-06** **Date: 02-06-2017**

Sample ID No : 2017-05-29-06/01

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.8	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.3	
3	Specific Gravity	2.58	–
4	Bulk Density(Loose) (Kg/l)	1.49	–
5	Bulk Density(Compacted) (Kg/l)	1.57	–
6	Water Absorption(%)	0.22	–

Note:

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Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-05-29-06** **Date: 02-06-2017**
Customer	:	Assistant Executive Engineer, Project division, Yelahanka zone, BBMP, Bangalore.
Address	:	Project division, Yelahanka zone, BBMP, Bangalore.
Project Name	:	Providing open gym equipment in Yelahanka New town park at 5th phase in Ward no.03
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer Reference	:	EE(Project) Ynk.Zone/WO/04/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	29-05-17
Sample ID No	:	2017-05-29-06/01
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	29-05-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : **5000** **grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	102	102	2.0	98.0	90-100
3	10 mm	3198	3300	66.0	34.0	25-55
4	4.75 mm	1637	4937	98.7	1.3	0-10
5	Pan	63	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-05-29-06** **Date: 02-06-2017**

Sample ID No : 2017-05-29-06/01

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.1	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	8.9	
3	Specific Gravity	2.65	_
4	Bulk Density(Loose) (Kg/l)	1.55	_
5	Bulk Density(Compacted) (Kg/l)	1.57	_
6	Water Absorption(%)	0.19	_
7	Aggregate crushing Value(%)	23.8	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.3	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-05-29-06** **Date: 02-06-17**

Customer : Assistant Executive Engineer, Project division, Yelahanka zone, BBMP, Bangalore.

Address : Project division, Yelahanka zone, BBMP, Bangalore.

Project Name : Providing open gym equipment in Yelahanka New town park at 5th phase in Ward no.03

Agency : Technical Manager (West), KRIDL, Bangalore.

Customer's Reference : EE(Project) Ynk.Zone/WO/04/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 29-05-17

Sample ID No : 2017-05-29-06/03

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 29-05-17

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0	100	100	100	100	100
2	4.75 mm	23	23	2.3	97.7	90-100	90-100	90-100	95-100
3	2.36 mm	44	67	6.7	93.3	60-95	75-100	85-100	95-100
4	1.18 mm	248	315	31.5	68.5	30-70	55-90	75-100	90-100
5	600 micron	360	675	67.5	32.5	15-34	35-59	60-79	80-100
6	300 micron	153	828	82.8	17.2	5-20	8-30	12-40	15-50
7	150 micron	106	934	93.4	6.6	0-10	0-10	0-10	0-15
8	Pan	66	1000	100	0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone I

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-05-29-06** **Date: 02-06-17**

Sample ID No : 2017-05-29-06/03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.1	–
2	Specific Gravity	2.56	–
3	Material finer than 75 micron(%)	4.6	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-06-10-01** **Date: 13-06-17**

Customer : Assistant Executive Engineer, Project division, Yelahanka zone, BBMP, Bangalore.

Address : Project division, Yelahanka zone, BBMP, Bangalore.

Project Name : Providing open gym equipment in Yelahanka New town park at 5th phase in Ward no.03

Agency : Technical Manager (West), KRIDL, Bangalore.

Customer's Reference : EE(Project) Ynk.Zone/WO/04/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 10-06-17

Sample ID No : 2017-06-10-01/01

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 13/06/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M20	06/06/2017	13/06/2017	150.44 X 150.34 X 150.87	22617	8.150	416.2	18.4	18.2
2	PCC	M20	06/06/2017	13/06/2017	150.21 X 150.21 X 150.29	22563	8.218	410.6	18.2	
3	PCC	M20	06/06/2017	13/06/2017	150.77 X 150.35 X 150.89	22668	8.299	405.8	17.9	

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-05-29-06** **Date:31-05-2017**
Customer	:	Assistant Executive Engineer, Project division, Yelahanka zone, BBMP, Bangalore.
Address	:	Project division, Yelahanka zone, BBMP, Bangalore.
Project Name	:	Providing open gym equipment in Yelahanka New town park at 5th phase in Ward no.03
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project) Ynk.Zone/WO/04/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	29-05-17
Sample ID No	:	2017-05-29-06/01
Sample Type	:	ACC 53grade cement
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	30-05-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.96	–
2	Finess by Air permeablity method (m^2/kg, Min)	285.5	225m^2/kg, Min
3	Density (gm/cc)	3.16	–
4	Standard Consistency (%)	28.0%	Not specified
5	Initial Setting time	175 minutes	Not less than 30 minutes
6	Final Setting time	280 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1mm	Not more than 10 mm

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-05-29-06** **Date: 27-06-2017**
Customer	:	Assistant Executive Engineer, Project division, Yelahanka zone, BBMP, Bangalore.
Address	:	Project division, Yelahanka zone, BBMP, Bangalore.
Project Name	:	Providing open gym equipment in Yelahanka New town park at 5th phase in Ward no.03
Agency	:	Technical Manager (West), KRIDL, Bangalore.
Customer's Reference	:	EE(Project) Ynk.Zone/WO/04/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	29-05-17
Sample ID No	:	2017-05-29-06/01
Sample Type	:	ACC 53grade cement
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	30-05-17

Compressive Strength			
Sl.No.	**Physical properties**	**Results**	**Requirement as per IS 12269: 2013**
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	56.5N/mm^2	Not less than 53 N/mm^2

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